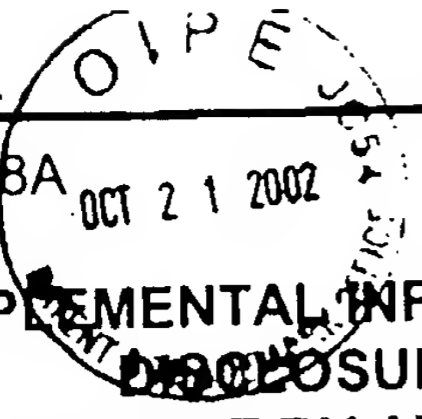



<div style="text-align: center;">  <p><b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b></p> <p>(use as many sheets as necessary)</p> </div>				<b>Complete if Known</b>	
				Application Number	10/054,629
				Filing Date	January 22, 2002
				Confirmation Number	5778
				First Named Inventor	Chang Bum Kim, et al.
				Group Art Unit	<del>1765</del> 1775
				Examiner Name	S. STEIN
Sheet	1	of	1	Attorney Docket No.	MEMC 01-0151 (2960.1)

U.S. PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY		
		Number	Kind Code <sup>2</sup> (if known)				
FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T <sup>6</sup>
		Office	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)			
SSS	145	JP	11043396		Ohashi Wataru, et al.	02-16-1999	A
OTHER ART - NON PATENT LITERATURE DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.					T <sup>6</sup>
SSS	146	International Search Report, PCT/US 02/01782 dated September 20, 2002					

**RECEIVED**

OCT 24 2002

TC 1700

Examiner Signature		Date Considered	3/7/2004
-----------------------	--	--------------------	----------


\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3) <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached or place an "A" here if English language abstract is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)  MAY 22 2002 PATENT & TRADEMARK OFFICE		Application Number	10,054,629
		Filing Date	January 22, 2002
		Confirmation Number	5778
		First Named Inventor	Chang Bum Kim
		Group Art Unit	<del>1765</del> 1775
		Examiner Name	<del>Unknown</del> STEIN
Sheet 1 of 11	Attorney Docket No.	MEMC 01-0151(2960.1)	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code <sup>2</sup> (if known)		
SSS	1	3,997,368		Petroff et al.	12/14/1976
SSS	2	4,314,595		Yamamoto et al.	02/09/1982
SSS	3	4,350,560		Helgeland et al.	09/21/1982
SSS	4	4,981,549		Yamashita et al.	01/01/1991
SSS	5	5,264,189		Yamashita et al.	11/23/1993
SSS	6	5,316,742		Tomioka et al.	05/31/1994
SSS	7	5,441,014		Tomioka et al.	08/15/1995
SSS	8	5,474,020		Bell et al.	12/12/1995
SSS	9	5,485,803		Habu, R.	01/23/1996
SSS	10	5,487,354		von Ammon et al.	01/30/1996
SSS	11	5,494,849		Iyer et al.	02/27/1996
SSS	12	5,502,010		Nadahara, S. et al.	03/26/1996
SSS	13	5,567,399		von Ammon et al.	10/22/1996
SSS	14	5,593,494		Falster	01/14/1997
SSS	15	5,667,584		Takano et al.	09/16/1997

Examiner Signature		Date Considered	3/7/2004
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

## Complete if Known

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	1765 1775
Examiner Name	Unknown STEIN
Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	16	5,704,973	Sakurada et al.	01/06/1998
SSS	17	5,728,211	Takano et al.	03/17/1998
SSS	18	5,789,309	Hellwig	08/04/1998
SSS	19	5,846,322	Schulmann et al.	12/08/1998
SSS	20	5,919,302	Falster et al.	07/06/1999
SSS	21	5,935,320	Graef et al.	08/10/1999
SSS	22	5,942,032	Kim et al.	08/24/1999
SSS	23	5,954,873	Hourai et al.	09/21/1999
SSS	24	5,958,133	Boulaev et al.	09/28/1999
SSS	25	5,968,262	Saishouji et al.	10/19/1999
SSS	26	5,968,264	Iida et al.	10/19/1999
SSS	27	5,994,761	Falster et al.	11/30/1999
SSS	28	6,045,610	Park et al.	04/04/2000
SSS	29	6,048,395	Iida et al.	04/11/2000
SSS	30	6,053,974	Luter et al.	04/25/2000
SSS	31	6,066,366	Berenbaum et al.	05/23/2000
SSS	32	6,093,913	Schrenker et al.	07/25/2000
SSS	33	6,120,599	Iida et al.	09/19/2000
SSS	34	6,153,008	von Ammon et al.	11/28/2000
SSS	35	6,197,111	Ferry et al.	03/06/2001

Examiner  
Signature

Date  
Considered

3/7/2004

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

## Complete if Known

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	1765 1775
Examiner Name	Unknown STEIN
Sheet 3 of 11	Attorney Docket No. MEMC 01-0151(2960.1)

SSS	36	6,228,164		von Ammon et al.	05/08/2001
SSS	37	6,236,104		Falster	05/22/2001
SSS	38	6,245,430		Hourai et al.	06/12/2001
SSS	39	6,254,672		Falster et al.	07/03/2001
SSS	40	6,312,516		Falster et al.	11/06/2001
SSS	41	6,336,968		Falster et al.	01/08/2002

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T <sup>6</sup>
		Office	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)			
SSS	42	EP	0 503 816	B1	Shin-Etsu Handotai Company Ltd.	09/16/1992	
SSS	43	EP	0 504 837	A2	Shin-Etsu Handotai Company Ltd.	09/23/1992	
SSS	44	EP	0 536 958	A1	Shin-Etsu Handotai Company Ltd.	04/14/1993	
SSS	45	EP	0 909 840		Shinetsu Handota KK	04/21/1999	
SSS	46	EP	0 962 556	A1	Shin-Etsu Handotai Company Ltd.	12/08/1999	
SSS	47	EP	0 962 557	A1	Shin-Etsu Handotai Company Ltd.	12/08/1999	
SSS	48	EP	0 990 718		Sumitomo Metal Ind. Ltd.	05/14/2000	
SSS	49	JP	1145391 (abstract only)		Yamashita Ichiro, et al.	06/07/1989	

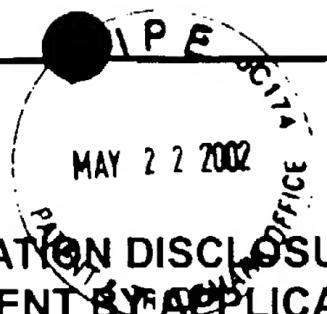
Examiner Signature	<i>Steph Steins</i>	Date Considered	3/7/2004
--------------------	---------------------	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A


  
**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

**Complete if Known**

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	4765 1775
Examiner Name	Unknown STEIN
Sheet	4 of 11
Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	50	JP	2-180789		Kawasaki Steel Corp.	07/13/1990	X
SSS	51	JP	2-267195		Nippon Steel Corp.	10/31/1990	X
SSS	52	JP	Hei 3-93700 (abstract only)		Nippon Steel Corp.	04/18/1991	
SSS	53	JP	4-042893		Nippon Steel Corp.	02/13/1992	X
SSS	54	JP	4-108682 (abstract only)		Fuji Electric Co., Ltd.	04/09/1992	
SSS	55	JP	2528309	B2	Seito Ito, et al.	08/28/1996	X
SSS	56	JP	8-330316 (Pub. Hei 07-158458)		Sumitomo Sitix Corp.	12/13/1996	X
SSS	57	JP	HO 8-268794		Sumitomo Sitix Corp.	10/15/1996	X
SSS	58	JP	HO 9-202690 (abstract only)		Shin-Etsu Semiconductor K.K.	08/05/1997	
SSS	59	JP	11-157995	A	Sumitomo Sitix Corp.	06/15/1999	X
SSS	60	JP	11-180800	A	Shin-Etsu Handotai Company Ltd.	07/06/1999	X
SSS	61	JP	11-189495	A	Sumitomo Metal Ind. Ltd.	07/13/1999	X
SSS	62	JP	11-199386	A	Shin-Etsu Handotai Company Ltd.	07/27/1999	X
SSS	63	JP	11-199387	A	Shin-Etsu Handotai Company Ltd.	07/27/1999	X
SSS	64	PCT	WO 97/26393 (abstract only)		Shin-Etsu Handotai Co., Ltd.	07/24/1997	
SSS	65	PCT	WO 98/45507		MEMC Electronic Materials Inc.	10/15/1998	
SSS	66	PCT	WO 98/45508		MEMC Electronic Materials Inc.	10/15/1998	

Examiner Signature		Date Considered	3/7/2004
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

## Complete if Known

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	4765 1775
Examiner Name	Unknown STEIN
Attorney Docket No.	MEMC 01-0151(2960.1)

Sheet 5 of 11

SSS	67	PCT	WO 98/45510		MEMC Electronic Materials Inc.	10/15/1998	
SSS	68	PCT	WO 00/14776		MEMC Electronic Materials Inc.	03/16/2000	
SSS	69	PCT	WO 00/22196		MEMC Electronic Materials Inc.	04/20/2000	
SSS	70	PCT	WO 00/22198		MEMC Electronic Materials	04/20/2000	
SSS	71	PCT	WO 01/21861	A1	MEMC Electronic Materials	03/29/2001	
SSS	72	PCT	WO 01/21865	A1	MEMC Electronic Materials	03/29/2001	
SSS	73	UK	GB 2 137 524	A	Hitachi Ltd. (Japan)	10/10/1984	
SSS	74	UK	GB 2 182 262	A	Sony Corp.	05/13/1987	

## OTHER ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
SSS	75	ABE, T., et al., "Swirl Defects in Float-Zoned Silicon Crystals," Physics., Vol. 116B, (1985), pp. 139-147	
SSS	76	ABE, T., et al., "The Characteristics of Nitrogen in Silicon Crystals," VLSI Science and Technology/1985, (Electrochem. Soc. Pennington, 1985), Proceedings Vol. 85-5, (1985), pp. 543-551	
SSS	77	ABE, T., et al., "Behavior of Point Defects in FZ Silicon Crystals," Semiconductor Silicon 1990, Proceedings of the Sixth International Symposium on Silicon Materials Science and Technology, Vol. 90-7 (1990), pp. 105-116	
SSS	78	ABE, T., et al., "Dynamic Behavior of Intrinsic Point Defects in FZ and CZ Silicon Crystals," Mat. Res. Soc. Symp. Proc., Vol. 262, (1992), pp. 3-13	
SSS	79	ABE, T., "The Formation Mechanism of Grown-In Defects in CZ Silicon Crystals Based on Thermal Gradients Measured by Thermocouples Near Growth Interfaces," Materials Science Engineering, Vol. B73, (2000), pp. 16-29	

Examiner Signature	<i>Stephen Stein</i>	Date Considered	3/7/2004
--------------------	----------------------	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

## Complete if Known

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	<del>1765</del> 177 S
Examiner Name	Unknown
Attorney Docket No.	MEMC 01-0151(2960.1)

Sheet 6 of 11

SSS	80	BORIONETTI, G., et al., "Investigation of Low Denisty Defects in Czochralski Silicon Crystals: Their Detectability, Formation Kinetics and Influence on Gate Oxide Intergrity," Electrochemical Society Proceedings, Vol. 96-13, pp. 160-169
SSS	81	DE KOCK, A.J.R., "Microdefects in Swirl-Free Silicon Crystals," pp. 83-94 (source unknown) (date unknown)
SSS	82	DE KOCK, A.J.R., "The Elimination of Vacancy-Cluster Formation in Dislocation -Free Silicon Crystals," J. of the Electrochem. Soc.: SOLID-STATE SCIENCE AND TECHNOLOGY, Vol. 118, No. 11, (Nov. 1971), pp.1851-1856
SSS	83	DE KOCK, A.J.R., et al., "Effect of Growth Parameters on Formation and Elimination of Vacancy Clusters in Dislocation-Free Silicon Crystals," Journal of Crystal Growth, Vol. 22 (1974), pp. 311-320
SSS	84	DE KOCK, A.J.R., "Point Defect Condensation in Dislocation-Free Silicon Crystals", Semiconductor Silicon, 1977, pp. 508-520.
SSS	85	DE KOCK, A.J.R, et al., "The Effect of Doping on the Formation of Swirl Defects in Dislocation-Free Czochralski-Grown Silicon Crystals," Journal of Crystal Growth, Vol. 49, (1980) pp. 718-734
SSS	86	DORNBERGER, E., et al., "The Impact of Dwell Time Above 900°C During Crystal Growth on the Gate Oxide Integrity of Silicon Wafers," Electrochemical Society Proceedings, Vol. 96, No. 13, pp. 140-151
SSS	87	DORNBERGER, E., et al., "The Dependence of Ring Like Distributed Stacking Faults on the Axial Temperature Gradient of Growing Czochralski Silicon Crystals," Electrochemical Society Proceedings, Volume 95-4, (5/1995) pp. 294-305
SSS	88	DORNBERGER, E., et al., "Simulation of Grown-In Voids in Czochralski Silicon Crystals," Electrochemical Society Proceedings, Vol. 97-22, pp. 40-49
SSS	89	DORNBERGER, E., et al., "Simulation of Non-Uniform Grown-In Void Distributions in Czochralski Silicon Crystals," Electrochemical Society Proceedings, Vol. 98, Vol. 1, pp. 490-503
SSS	90	DORNBERGER, E., et al., "Defects in As-Grown Silicon and Their Evolution During Heat Treatments," Materials Science Forum, 1997, Vols. 258-263, pp. 341-346.

Examiner  
Signature

Date  
Considered

3/7/2004

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002


# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

## Complete if Known

Application Number	10,054,629
Filing Date	January 22, 2002
Confirmation Number	5778
First Named Inventor	Chang Bum Kim
Group Art Unit	<del>1765</del> 1775
Examiner Name	Unknown
Sheet	7 of 11
Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	91	EIDENZON, A.M., et al., "Classification of Grown-In Microdefects in Czochralski-Grown Silicon Crystals," Inorganic Materials, Vol. 31(4), 1994, pp. 401-409	
SSS	92	EIDENZON, A.M., et al., "Defect-Free Silicon Crystals Grown By The Czochralski Technique," Inorganic Materials, Vol. 33, No. 3, (1997) pp. 219-225.	
SSS	93	EIDENZON, A.M., et al., "Influence Of Growth Rate On Swirl Defects In Large Dislocation-Free Crystals Of Silicon Grown By The Czochralski Method," Sov. Phys. Crystallogr.; Vol. 30, No. 5 (1985) pp. 576-580.	
SSS	94	FALSTER, R., et al., "Intrinsic Point-Defects and Reactions in the Growth of Large Silicon Crystals," Electrochemical Society Proceedings, Vol. 98-1, pp. 468-489	
SSS	95	FALSTER, R., et al., "Intrinsic Point Defects and Their Control in Silicon Crystal Growth and Wafer Processing," Vol. 25(6), (2000), pp. 28-32	
SSS	96	FALSTER, R., et al., "On the Properties of the Intrinsic Point Defects in Silicon: A Perspective from Crystal Growth and Wafer Processing," Vol. 222(1), (2000), pp. 219-244	
SSS	97	FOLL, H., et al. "The Formation of Swirl Defects in Silicon by Agglomeration of Self-Interstitials," Journal of Crystal Growth, 1977, pp. 90-1087, Vol. 40, North-Holland Publishing Company	
SSS	98	HARADA, H., et al., "Oxygen Precipitation Enhanced with Vacancies in Silicon, pp. 76-85	
SSS	99	HOURAI, M., et al., "Nature and Generation of Grown-In Defects in Czochralski Silicon Crystals," Electrochemical Society Proceedings, Vol, 98-1, pp. 453-467	
SSS	100	HOURAI, M., et al., "Improvement of Gate Oxide Integrity Characteristics of CZ-Grown Silicon Crystals," Progress in Semiconductor Fabrication presented by: Semiconductor Equipment and Materials International, Semicon/Europa 93, March 30-April 1, 1993, Geneva, Switzerland	
SSS	101	HOURAI, M., et al. "Growth Parameters Determining the Type of Grown-In Defects in Czochralski Silicon Crystals," Materials Science Forum, Vols. 196-201 (1995) pp. 1713-1718	
SSS	102	HOURAI, M., et al., "Formation Behavior of Infrared Light Scattering Defects in Silicon During Czochralski Crystal Growth," J. Electrochem. Soc., Vol. 142(9), (1995), 3193-3201	

Examiner Signature		Date Considered	3/7/2004
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A


  
**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

**Complete if Known**

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10,054,629
				Filing Date	January 22, 2002
				Confirmation Number	5778
				First Named Inventor	Chang Bum Kim
				Group Art Unit	<del>1765</del> 1775
				Examiner Name	Unknown
Sheet	8	of	11	Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	103	KISSINGER, G., et al. "A Method for Studying the Grown-In Defect Density Spectra in Czochralski Silicon Wafers," Journal of Electrochemical Society, Vol. 144, No. 4, (1997) pp. 1447-1456	
SSS	104	KITANO, et al., "Identification of Vacancy Clusters in FZ-Si Crystals," Phys. Stat. Sol, Vol. 127(a), (1991), 341-347	
SSS	105	LEMKE, H., et al., "Analytical Approximations for the Distributions of Intrinsic Point Defects in Grown Silicon Crystals," Phys. Stat. Sol. (a) Vol. 176 (1999), pp. 843-865	
SSS	106	NAKAMURA, K., et al., "Formation Process of Grown-In Defects in Czochralski Grown Silicon Crystals," Journal of Crystal Growth, Vol. 180, (1997) pp. 61-72	
SSS	107	PARK, J.G., et al., "Effect of Crystal Defects on Device Characteristics", <i>Proceedings of the Symposium on Crystalline Defects and Contamination: Their Impact And Control In Device Manufacturing II</i> , Proceed. Vol. 97-22 (1997), pp.173-195	
SSS	108	PUZANOV, N.I., et al., "Influence of Transitional Crystallization Regimes on Microdefects in Silicon," USSR Academy of Sciences Newsletter, Vol. 22, No. 8 (1986), pp.1237-1242	X
SSS	109	PUZANOV, N.I., et al., "Relaxation In A System Of Point Defects In A Growing Dislocation-Free Crystal Of Silicon," Sov. Phys. Crystallogr., Vol. 31, No. 2, (1986) pp. 219-222.	
SSS	110	PUZANOV, N.I., et al., "Microdefects in Silicon Grown by the Czochralski Method with a Vertical Magnetic Field Acting on the Melt," Sov. Phys. Crystallogr. 35(1), (1990), pp. 102-105	
SSS	111	PUZANOV, N.I., et al., "Influence of Growth Conditions on the Formation of Microdefects in Dislocation-Free Silicon," Sov. Phys. Crystallogr., Vol. 34(2), (1989) pp. 273-278	
SSS	112	PUZANOV, N.I., et al., "The effect of thermal history during crystal growth on oxygen precipitation in Czochralski-grown silicon," Semicond. Sci. Technol., Vol. 7, (1992), pp. 406-413	
SSS	113	PUZANOV, N.I., et al., "Formation of the bands of anomalous oxygen precipitation in Czochralski-grown Si crystals," Journal of Crystal Growth vol. 137, (1994), pp. 642-652	
SSS	114	PUZANOV, N.I., et al., "Modeling Point-Defect Distribution in Dislocation-Free Si Crystals Grown from the Melt," Inorganic Materials, Vo. 32(1), (1996), pp. 1-9	

Examiner  
Signature

Date  
Considered

3/7/2004

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A

MAY 22 2002

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

**Complete if Known**

PTO/SB/08A MAY 22 2002 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	10,054,629			
	Filing Date	January 22, 2002			
	Confirmation Number	5778			
	First Named Inventor	Chang Bum Kim			
	Group Art Unit	1765			
	Examiner Name	Unknown			
Sheet	9	of	11	Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	115	PUZANOV, N.I., et al., "The Role of Intrinsic Point Defects in the Formation of Oxygen Precipitation Centers in Dislocation-Free Silicon," Crystallography Reports, Vol. 41, No. 1, (1996), pp. 134-141	
SSS	116	PUZANOV, N.I., et al., "Cultivation, Morphology and Structural Integrity of Dislocation-Free Silicon Tetracrystals," Inorganic Materials, Vol. 32, No. 8 (1996), pp. 903-912	X
SSS	117	PUZANOV, N.I., et al., "Harmful Microdefects in the Seed-End Portion of Large-Diameter Silicon Ingots," Inorganic Materials, Vol. 33, No. 8, (1997) pp. 765-769	
SSS	118	PUZANOV, N.I., et al., "Modelling microdefect distribution in dislocation-free Si crystals grown from the melt," Journal of Crystal Growth, 178, (1997), pp. 468-478	
SSS	119	PUZANOV, N.I., et al., "Role of Vacancies in the Nucleation of Ringlike-patterned Oxidation-induced Stacking Faults in Melt-grown Silicon Crystals," Inorganic Materials, Vol. 34-4, (1998) pp. 307-314	
SSS	120	ROKSNOER, P.J., "Effect of Low Cooling Rates on Swirls and Striations in Dislocation-Free Silicon Crystals," Vol. 35, (1976), pp. 245-248	
SSS	121	ROKSNOER, P.J., "Microdefects in a Non-Striated Distribution in Floating-Zone Silicon Crystals," Journal of Crystal Growth, Vol. 53 (1981), pp. 563-573	
SSS	122	ROKSNOER, P.J., "The Mechanism of Formation of Microdefects in Silicon," Journal of Crystal Growth, Vol. 68 (1984), pp. 596-612	
SSS	123	RYUTA, J, et al., "Crystal-Originated Singularities on Si Wafer Surface after SC1 Cleaning," Japanese Journal of Applied Physics, Vol. 29(11) (1990), pp. L1947-L1949	
SSS	124	SEIDEL, T.E., "Silicon Wafers for the 1990's," Journal of Crystal Growth, Vol. 85, (1987), pp. 97-105	
SSS	125	SHIMANUKI, Y., et al., "Effects of Thermal History on Microdefect Formation in Czochralski Silicon Crystals," Japanese Journal of Applied Physics, Vol. 24, No. 12, (1985), pp. 1594-1599	
SSS	126	SINNO, T., et al., "On the Dynamics of the Oxidation-Induced Stacking-Fault Ring in as-grown Czochralski silicon crystals," Applied Physics Letters, Vol. 70, No. 17, (1997) pp. 2250-2252	
SSS	127	SINNO, T., et al., "Point Defect Dynamics and the Oxidation-Induced Stacking-Fault Ring in Czochralski-Grown Silicon Crystals," J. Electrochem. Soc., Vol. 145, No. 1, (1998) pp. 302-318	

Examiner Signature		Date Considered	3/7/2004
--------------------	--	-----------------	----------


\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A				<b>Complete if Known</b>	
<p style="text-align: center;"> <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> </p> <p style="text-align: center;">(use as many sheets as necessary)</p>				Application Number	10,054,629
				Filing Date	January 22, 2002
				Confirmation Number	5778
				First Named Inventor	Chang Bum Kim
				Group Art Unit	<del>1765</del> 1775
				Examiner Name	Unknown
Sheet	10	of	11	Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	128	TAN, T. Y., "Point Defects, Diffusion Processes, and Swirl Defect Formation in Silicon," Appl. Phys. A., Vol. 37, (1985) pp. 1-17	
SSS	129	VANHELLEMONT, J., et al., "Defects in As-Grown Silicon and Their Evolution During Heat Treatments," Materials Science Forum, Vols. 258-263, (1997) pp. 341-346	
SSS	130	VIRZI, "Computer Modelling of Heat Transfer in Czochralski Silicon Crystal Growth," Journal of Crystal Growth, 1991, Vol. 112, pp. 699-722.	
SSS	131	VON AMMON, W., et al. "The Dependence of bulk defects on the axial temperature gradient of silicon crystals during Czochralski growth," Journal of Crystal Growth, Vol. 151 (1995) pp. 273-277	
SSS	132	VON AMMON, W., et al. "Bulk properties of very large diameter silicon single crystals," Journal of Crystal Growth, Vol. 198/199, (1999), pp. 390-398	
SSS	133	VORONKOV, V., "The Mechanism of Swirl Defects Formation in Silicon", Journal of Crystal Growth, Vol. 59 (1982) pp. 625-643.	
SSS	134	VORONKOV, V., et al., "Behaviour and Effects of Intrinsic Point Defects in the Growth of Large Silicon Crystals", Electrochemical Society proceedings, Volume 97-22, (8/1997), pp. 3-17	
SSS	135	VORONKOV, V.V., et al., "Vacancy-type microdefect formation in Czochralski silicon", Journal of Crystal Growth 194 (1998) 76-88	
SSS	136	VORONKOV, V., et al., "Vacancy and Self-Interstitial Concentration Incorporated into Growing Silicon Crystals," Journal of Applied Physics, Vol., 86(11), 1999, 5975-5982	
SSS	137	VORONKOV, V., et al., "Grown-in microdefects, residual vacancies and oxygen precipitation banks in Czochralski silicon" Journal of Crystal Growth, 304 (1999) pp. 462-474	
SSS	138	WIJARANAKULA, W., "Numerical Modeling of the Point Defect Aggregation during the Czochralski Silicon Crystal Growth", Journal of Electrochemical Society, Vol. 139, No. 2 (Feb. 1992), pp.604-616	
SSS	139	WIJARANAKULA, W., "Effect of High-Temperature Annealing on the Dissolution of the D-Defects in N-Type Czochralski Silicon," Appl. Phys. Lett., Vol. 64(8), (1994), 1030-1032	

Examiner Signature		Date Considered	3/2/2004
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A				<b>Complete if Known</b>	
<p style="text-align: center;">MAY 22 2002</p> <p style="text-align: center;"><b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b></p> <p style="text-align: center;">(use as many sheets as necessary)</p>				Application Number	10,054,629
				Filing Date	January 22, 2002
				Confirmation Number	5778
				First Named Inventor	Chang Bum Kim
				Group Art Unit	<del>1765</del> → 1775
				Examiner Name	Unknown
Sheet	11	of	11	Attorney Docket No.	MEMC 01-0151(2960.1)

SSS	140	WINKLER, R., et al. "Improvement of the Gate Oxide Integrity by Modifying Crystal Pulling and Its Impact on Device Failures" Journal of the Electrochemical Society, Vol. 141, No. 5 (5/1994) pp. 1398-1401.	
SSS	141	YAMAGISHI, et al., "Recognition of D Defects in Silicon Single Crystals by Preferential Etching and Effect on Gate Oxide Integrity", Semicond. Sci Technol. 7, 1992, A135-A140.	
SSS	142	YAMAUCHI, T., et al., "Application of Copper-Decoration Method to Characterize As-Grown Czochralski-Silicon," Jpn. J. Appl. Phys., Vol. 31, (1992), pp. L439-L442	
SSS	143	ZIMMERMAN, H., et al. "Gold and Platinum Diffusion: the Key to the Understanding of Intrinsic Point Defect Behavior in Silicon", Applied Physics A Solids and Surfaces, Vol. A55, No. 1 (1992) pp. 121-134	
SSS	144	ZIMMERMAN, H., et al. "Vacancy concentration wafer mapping in silicon" Journal of Crystal Growth, Vol. 129, (1993) pp. 582-592.	

Examiner Signature		Date Considered	3/7/2004
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.